

REMARKS

Claims 1-27 are all the claims pending in the present application. The Examiner found the arguments in the Amendment filed June 1, 2005, to be persuasive, however the Examiner now applies new references to support the rejections of claims 1-27. Specifically, claims 1-6, 9-13, 16, 19, and 24-27 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Kazutoshi (Japanese Publication No. 04-068391); actually, in the Office Action, the Examiner relies on the Abstract of Kazutoshi to support the claim rejections. Claim 7, 8, 14, 15, 17, 18, and 20-23 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kazutoshi in view of Ohta (US Patent No. 6,608,927).

§102(b) Rejections (Kazutoshi) - Claims 1-6, 9-13, 16, 19, and 24-27

The Examiner rejects claims 1-6, 9-13, 16, 19, and 24-27 as allegedly being anticipated by Kazutoshi for the reasons set forth on pages 2-5 of the present Office Action. Applicant traverses these rejections at least based on the following reasons.

With respect to independent claim 1, the Examiner alleges

Kazutoshi teaches an image display method for displaying a monochromatic image (see the abstract, display ON) with a color display device in which a unit pixel is composed of R, G, B cells (see the abstract, array of RGB filters constituting one pixel), comprising the step of displaying the monochromatic image having a higher gradation resolution than reproduction performance of each of the R, G and B cells in said color display device (see the abstract, increasing gradations of white, note it is inherent that the bits for the white is total number of bits of RGB, which is greater than each of the RGB bits).

In response, first, Applicant submits that Kazutoshi does not disclose or suggest displaying a monochromatic image in a color display device, as recited in claim 1. Kazutoshi is

directed to displaying a color image on a liquid crystal panel. *See Constitution section of abstract.* Further, Kazutoshi seeks to reduce cross-talk in a color image on a color liquid crystal display device by increasing gradations of white, column by column, based on the number of excessive voltages applied to respective columns. That is, Kazutoshi discloses that the crosstalk reducing circuit creates display dot data in which the luminance is corrected, column by column, according to the total of excessive voltages applied to respective columns of liquid crystal panel in order to reduce the crosstalk. Figs. 7 and 8 of Kazutoshi relate to the monochromatic liquid crystal display device and Figs. 1-4 thereof relate to the color liquid crystal panel. In Kazutoshi, the monochromatic liquid crystal display device reproduces monochromatic images and the color liquid crystal panel reproduces color images. Kazutoshi, however, is not directed to displaying a monochromatic image in a color display device.

Yet further, to the extent that Kazutoshi teaches an increase of white gradations, this does not obviate the fact that the display is a color display. What Kazutoshi discloses with regard to "increasing gradations of white" is to increase the gradation level, that is, to reduce the crosstalk by brightening white pixels in a column which are darker than white pixels of adjacent columns due to the crosstalk (that is, increasing the luminance of the pixels), compensating the difference in brightness without any decrease in contrast as described in the "ACTION" and "EFFECT OF THE INVENTION" portions of the enclosed partial translation of Kazutoshi. Namely, the "increase of gradations of white" disclosed in Kazutoshi is to increase a value of display dot data DATA to make DATA in case of a monochromatic liquid crystal display device and to increase

values of display dot data DR, DG and DB to make DR' (DR'') , DG' (DG'') and DB' (DB'') in case of a color liquid crystal display device.

In other words, the "increase of gradations of white" disclosed in Kazutoshi is to increase the data value displaying white, for example, to bring the value closer to 1024, in a case where the display dot data represents the gradations (gradation levels) of low density (for example of white) to high density (for example of black) with a determined bit number for example of 10 bits. These teachings are different from an exemplary effect of increasing the number of display bits from the number of determined bits in order to represent an image with 12 bits or 14 bits, according to the present invention, for example.

That is, Kazutoshi does not disclose or suggest at least, "displaying the monochromatic image having a higher gradation resolution than reproduction performance of each of the R, G and B cells in said color display device," as recited in claim 1. Kazutoshi simply appears to correct differences in brightness due to excess voltages, and, as indicated above, does not appear to involve displaying a monochromatic image having a higher gradation resolution than reproduction performance of each of the R, G and B cells in a color display device.

Yet further, in the color display disclosed in Kazutoshi, while grey is the color normally being represented when each of the display dot data of R, G and B is equal to each other and white means that the data value is large, the number of gradations of each of the R, G and B is equal to the number of gradations of grey, that is, the reproduction performance of each of the R, G and B cells in color display device is same as the display gradation resolution in monochromatic image.

On the other hand, the present invention can display the monochromatic (black and white or blue based monochromatic, for example) image using the R, G and B color cells of a predetermined gradation (for example, 10 bits) and increase the bits used for determining what bits represent the grey gradations from black to white; that is, increase the gradation resolution, thereby representing the monochromatic display to 11.58 bits, for example.

Therefore, the increase of gradations of white disclosed in Kazutoshi is totally different from the increase of gradation resolution (bits) of monochromatic display in the present invention and thus does not disclose the present invention.

Therefore, at least based on the foregoing, Applicant submits that Kazutoshi does not anticipate claim 1.

With respect to independent claim 10, Applicant submits that this claim is patentable at least based on reasons similar to those set forth above with respect to claim 1.

With respect to dependent claims 2-6, 9, 11-13, 16, 19, and 24-27, Applicant submits that these claims are patentable at least by virtue of their direct or indirect dependency from independent claims 1 and 10.

Further, with respect to dependent claims 4 and 11, Applicant submits that Kazutoshi does not disclose or suggest at least, “wherein a minimum value and a maximum value of said input data respectively correspond to approximate minimum and maximum luminance values as obtained by combining said R, G and B cells,” as recited in claim 4 and similarly recited in claim 11. There is no mention in Kazutoshi of a correspondence between a minimum and a maximum

value of input data and approximate minimum and maximum luminance values obtained by combining R, G and B cells.

Further, with respect to dependent claim 5, there is no teaching or suggestion in Kazutoshi that the maximum value of input data is converted to a sum of values for R, G and B cells and used as a new set of input data. There is no mention in Kazutoshi of a conversion of a maximum value of input data.

Further, with respect to dependent claim 6, Kazutoshi does not mention that data for each of the R, G and B cells in the input data has been obtained by generally equal allotment.

Further, with respect to dependent claims 9, 12, 13 and 16, the Examiner continues to rely on the Abstract of Kazutoshi to develop his conclusions that the features of claims 9, 12, 13, and 16 are satisfied by Kazutoshi. However, the specific features set forth in these claims are clearly not satisfied by Kazutoshi.

Applicant's understanding of Kazutoshi is briefly explained above, and based on this understanding, it is clear that the specific features of respective claims 9, 12, 13, and 16 are not addressed in Kazutoshi.

At least based on the foregoing, Applicant submits that claims 1-6, 9-13, 16, 19, and 24-27 are patentably distinguishable over Kazutoshi.

§103(a) Rejections (Kazutoshi/Ohta) - Claims 7, 8, 14, 15, 17, 18, and 20-23

The Examiner rejects claims 7, 8, 14, 15, 17, 18, and 20-23 over Kazutoshi in view of Ohta for the reasons set forth on pages 6-7 of the present Office Action. Applicant traverses these rejections at least based on the following reasons.

First, Applicant submits that claims 7, 8, 14, 15, 17, 18, and 20-23 are patentable at least by virtue of their respective dependencies from independent claims 1 and 10. Ohta does not make up for the deficiencies of Kazutoshi.

Further, with respect to claims 7 and 14, even though Ohta may show a CIE chromaticity diagram, nowhere does Ohta disclose or suggest that data for each of the R, G and B cells in the input data is within a reason bounded by coordinates (0.174,0.0), (0.4, 0.4) and (α , 0.4) (where α is an x-coordinate of a point at which a spectrum locus crosses a straight line that is parallel to an x-axis and which intercepts a y-axis at 0.4).

Further, with respect to dependent claims 17 and 18, Applicant submits that the cited portions of Ohta do not disclose or suggest image data is based on an image being used for medical diagnosis. Contrary to the Examiner's statement, there is no such mention of an image being used for medical diagnosis in the cited portion of Ohta.

Further, with respect to claims 20 and 21, contrary to the Examiner's assertions, the specific features of each of these claims are not mentioned in Ohta. Specifically, with respect to claim 20, nowhere does Ohta disclose or suggest that the apparatus provides a display at a maximum luminance of approximately 500 cd/m^2 - 5000 cd/m^2 . With respect to claim 21, nowhere does Ohta disclose or suggest the feature of a processing unit comprising frame memories, a data converting section, and a switching section for subsequently outputting data stored in the frame memories.

Yet further, Applicant submits that one skilled in the art would not have been motivated to combine the teachings of Kazutoshi with Ohta, as Ohta is directed to converting a first color

signal based on a display on, for example, a CRT color monitor into another color signal suitable for a printer, for example. On the other hand, Kazutoshi simply appears to be directed to correcting or reducing cross-talk in images being displayed on a color liquid crystal display device. Kazutoshi is not directed to converting a specific image signal for a particular device into another signal for a different device. Therefore, at least based on the foregoing, Applicant submits that one skilled in the art would not have been motivated to combine the teachings of Kazutoshi with that of Ohta, as Kazutoshi makes its corrections by simply “increasing gradations of white”, and does not perform the types of conversions discussed in Ohta.

At least based on the foregoing, Applicant submits that claims 7, 8, 14, 15, 17, 18, and 20-23 are patentably distinguishable over the applied references, either alone or in combination.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

RESPONSE UNDER 37 C.F.R. § 1.111
U.S. Appln. No.: 09/617,308

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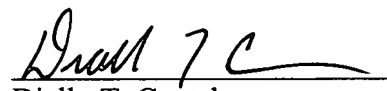
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